

**UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
AUSTIN DIVISION**

GRAPHITE CHARGING COMPANY LLC,

Plaintiff,

v.

TESLA, INC.

Defendant.

Case No. \_\_\_\_\_

Jury Trial Demanded

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff, GRAPHITE CHARGING COMPANY LLC (“Graphite” or “Plaintiff”), by and through its counsel, files this Complaint against Tesla, Inc. (“Tesla” or “Defendant”) for infringement of United States Patent Nos.: 8,103,391 (the “’391 Patent”) and 8,291,243 (the “’243 Patent”) (together the “Patents-in-Suit”), and allege the following:

**NATURE OF THE ACTION**

1. This is an action for infringement of the Patents-in-Suit arising under the patent laws of the United States, 35 U.S.C. §§ 100, *et seq.*

**PARTIES**

2. Plaintiff Graphite is a limited liability company formed under the laws of New York, having a place of business at 3610-2 N Josey, Suite 223, Carrollton, Texas 75007.

3. Tesla, Inc. is a Delaware corporation that, as of December 1, 2021, moved its principal executive offices and/or headquarters to 13101 Tesla Road<sup>1</sup>, Austin, Texas 78725. As of April 2022, Tesla, Inc. has operated an Austin factory referred to as “Texas Gigafactory” at 1 Tesla

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<sup>1</sup> Tesla’s address was listed as “13101 Harold Green Road”; in 2022 “Harold Green Road” was changed to “Tesla Road.” See: <https://www.teslarati.com/tesla-giga-texas-13101-tesla-road-austin-texas-name-change-harold-green-road/>.

Road, Austin, Texas 78725. *See* Tesla, Inc., Securities and Exchange Commission 2022 Form 10-K, <https://www.sec.gov/Archives/edgar/data/1318605/000095017022000796/tsla-20211231.htm>, attached as **Exhibit 1**.

4. Upon information and belief, Tesla is a specialist in energy management and automation throughout the United States and does business in every state, including Texas, either directly or indirectly. Tesla, Inc. designs, develops, manufactures and sells energy generation and storage systems and offers services related to their products. *Id.*

5. Upon information and belief, Tesla develops, uses, manufactures and sells software capabilities for remotely controlling and dispatching their energy storage systems across a wide range of markets and applications, including through their real-time energy control and optimization platforms. *Id.* at 4.

6. Upon information and belief, Tesla designs, develops, uses and sells energy storage products and systems, such as the “Powerpack” and “Megapack,” which are fully integrated with Tesla’s Suite of Optimization Software Solutions.

### **JURISDICTION AND VENUE**

7. This Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a) because this is a patent infringement action that arises under the patent laws of the United States, 35 U.S.C. §§ 100 *et seq.*

8. This Court has specific and general personal jurisdiction over Defendant under due process and/or the Texas Long-Arm Statute, because Defendant has committed infringing acts giving rise to this action in Texas and within this judicial district. This Court’s exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice because Defendant has established minimum contacts with this forum. For example, on

information and belief, Defendant has committed acts of infringement in this judicial district by, among other things, selling and offering for sale products that infringe the Patents-in-Suit, directly or through intermediaries, including as alleged herein.

9. Venue is proper in this judicial district under 28 U.S.C. §§ 1391(b), (c), (d), and/or 1400(b). “[V]enue is proper in the district where the defendant resides or where the defendant has committed acts of infringement and has a regular and established place of business.” *MV3 Partners LLC v. Roku, Inc.*, 2019 U.S. Dist. LEXIS 234328, at \*6 (W.D. Tex. June 25, 2019) (internal citations omitted). Tesla is headquartered and registered to do business in Texas and maintains a regular and established place of business in this district at, for example, 13101 Tesla Road, Austin, Texas 78725. Tesla also has offices, including sales offices, at, for example, 11600 Century Oaks Terrace STE 130, Austin, Texas 78758, where business operations are conducted in this judicial district. Tesla also has a factory where it makes, upon opinion and belief, infringing products within this judicial district. Further, upon information and belief, the witnesses and sources of proof necessary for this action are easily accessible in this district.

### **PERSONAL JURISDICTION OVER DEFENDANT**

10. Plaintiff incorporates each preceding paragraph as if fully set forth herein.

11. This Court has personal jurisdiction over Defendant partly because a substantial portion of the events giving rise to the claims alleged in this Complaint, for which Tesla is responsible, occurred and continue to occur in Texas.

12. On information and belief, Defendant has used the '391 and '243 patents-in-suit at least to (1) develop the EV Tesla Charging Stations, and (2) develop Tesla's Suite of Optimization Software Solutions, i.e., the Autonomous Control. *See Support: Charging Your Tesla*,

<https://www.tesla.com/support/charging> (last accessed July 20, 2023); attached as **Exhibit 4**<sup>2</sup>; *Power Pack: Microgrid System*, [https://www.gemenergy.com.au/wp-content/uploads/2017/11/Powerpack\\_Microgrid-System-Brochure.pdf](https://www.gemenergy.com.au/wp-content/uploads/2017/11/Powerpack_Microgrid-System-Brochure.pdf) (last accessed July 20, 2023), attached as **Exhibit 5**.

13. Tesla is also subject to the personal jurisdiction of this Court because: (i) Defendant sells products and services to customers in this judicial district; and (ii) the patent infringement claims arise directly from Defendant's continuous and systematic activity in this judicial district.

14. The technology covered by Plaintiff's Patents-in-Suit has been utilized by Defendant and integrated within its products and software, including but not limited to, Tesla's Charging Stations and energy software platform(s), Tesla's electric vehicles, and the Tesla App, which are made, sold, and offered to be sold within Texas and used in Texas by Defendant and Defendant's customers. Further, the methods in which Defendant's products are put to use also infringe the methods and systems of the Patents-in-Suit. Each of these activities constitute a direct and indirect infringement of the Patents-in-Suit in Texas.

15. Therefore, Defendant purposefully availed itself of the privileges of conducting business in Texas and within this judicial district; established sufficient minimum contacts in Texas and within this judicial district such that they should reasonably and fairly anticipate being subject to litigation in Texas and this judicial district; and purposefully directed activities towards Texas residents and this judicial district. Such activities result in at least a portion of the patent infringement claims alleged herein, which arise out of or are related to one or more of the foregoing activities.

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<sup>2</sup> Exhibits 2 and 3 are intentionally omitted.

16. Accordingly, this Court has personal jurisdiction over Defendant, which (i) has committed and continue to commit acts of patent infringement in Texas and within this judicial district; (ii) has substantial, regularly conducted, and systematic business contacts in Texas and within this judicial district; (iii) owns, manages, and markets products in Texas and within this judicial district; and (iv) enjoys substantial income from selling products in Texas and within this judicial district.

### **BACKGROUND**

#### **Patent-in-Suit No. 8,103,391**

17. U.S. Patent No. 8,103,391, entitled “System for Detecting Interrupt Conditions During an Electric Vehicle Charging Process” (the “’391 Patent”), was duly and legally issued on January 23, 2012. *See* ’391 Patent, attached as **Exhibit 6**.

18. The ’391 Patent will expire on or about June 17, 2030.

19. The inventors named on the ’391 Patent are Erica Haefner Ferro, Mark William Trekell, and Paul Stuart Williamson; Erica Haefner Ferro is the first-named inventor. *See* ’391 Patent, attached as **Exhibit 6**.

20. Ms. Ferro has an undergraduate degree in Economics from Northwestern University and a Masters of Business Administration in Finance from Thunderbird School of Global Management.

21. Ms. Ferro worked as an academic researcher for International Business Machines Corporation (“IBM”) from 2000 through 2014, specializing in the fields of electric vehicles, charging stations, transaction processing systems, and electricity.

22. Ms. Ferro holds several United States patents in the field of electric technology.

23. The rights to the patent application that issued as the '391 Patent were assigned to IBM by Ms. Ferro and the other inventors and recorded on August 20, 2008; during this time, Ms. Ferro was an employee of IBM, a foremost leader in technology.

24. All rights, title, and interest, including the right to sue for past infringement of the '391 Patent, are owned by and assigned to Plaintiff Graphite Charging Company LLC. *See Notice of Recordation of Assignment, Document No.507274614*, (May 10, 2022), attached as **Exhibit 7**.

25. The '391 Patent discloses, *inter alia*, embodiments to manage a charging process of an electric vehicle. *See* '391 Patent, Abstract, attached as **Exhibit 6**.

26. With increasing costs of fossil fuels and concern about over-reliance on non-renewable resources, electric vehicles ("EVs") were poised to become critical components of transportation. Electric vehicles rely in whole or in part on electric power to drive the vehicle. *Id.* at 1:15-25.

27. EVs contain electric storage mechanisms that store electricity for when power is needed. In order to continue operating, the storage mechanism requires charging to replenish the depleted electric charge. One way to provide charging is through an "off-vehicle" charging station that provides an external source of electricity. *Id.* at 1:30-60.

28. Previously, EV manufacturers and electric utility companies had only planned and provided infrastructure for the most rudimentary charging scenarios, such as merely plugging the electric vehicle into a common electric outlet that was owned by the owner and operator of the electric vehicle. *Id.* at 6:60-65.

29. However, the current invention recognizes that charging EVs would frequently be conducted under much broader and more complex sets of circumstances than the simple scenario

discussed above. As such, the present invention provides a new and useful infrastructure to accommodate these complex transactions.<sup>3</sup> *Id.* at 6:65-67, 7:1-5.

30. The '391 Patent claims, *inter alia*, an energy transaction infrastructure that monitors data transmissions and conditions the charging process on a defined set of “charging interruption conditions.” *Id.* at 9:12-15.

31. The interruptions may include either a device capability interruption, a preference interruption, a data services interruption, or any combination thereof. *Id.* at 10:35-40.

32. If an interrupt condition is sensed, the process terminates the flow of electric power to or from a vehicle. For example, if pricing for energy were to exceed a predefined threshold in violation of a user-selected preference, the monitor detects this interrupt condition and initiates appropriate actions to terminate the electric power flow to the electric vehicle. *Id.* at 9:15-20. Alternatively, power could be supplied *to* the grid during times of high prices from stored energy within the vehicle. *Id.* at 4:48-57.

33. At the time of the invention, the prior art failed to suggest, either singly or in combination, an invention wherein a set of operational parameters of a charging process were monitored *during* the flow of electricity for one or more of the pre-defined interrupt conditions. *See Notice of Allowability*, U.S. Patent Application No 12/194,325, at 2 (September 6, 2011), attached as **Exhibit 8**.

34. Previously, prior art focused on the use of a single “in-band” source of data to control power. The use of “out-of-band” data either signally, or in combination with in-band data, offered a technical improvement by allowing multi-objective functions that leverage information happening outside the system to change the management of the power grid. This charging

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<sup>3</sup> The term “transaction” is broader than a monetary exchange and denotes an exchange of energy.

infrastructure was unconventional at the time and provided technical innovations that had previously not been available. As such, the present invention provides an improvement to computer functionality and the electric charging process itself.

35. Specifically, the present invention that is the subject of the '391 Patent provides an advancement over the prior art, *inter alia*, in equipment safety by protecting the integrity of components of an electric vehicle transaction infrastructure. For example, dangerous conditions, such as storm systems, that *may* cause malfunctioning components could be detected. Subsequently, a charging process may be terminated to prevent the dangerous condition from further escalating and causing irreparable harm to components of the electric vehicle transaction infrastructure.

36. In addition, the current invention solves problems unique to the charging of electric vehicles and provides an improvement to computer functionality over the prior art because it detects interruptions in *real-time* and dynamically monitors whether the charging process proceeds according to the terms and conditions established by respective parties to the charging process. For example, if a charging process were to complete in violation of a charging plan, then difficulties would arise in calculating an amount due and to whom. The present invention solves this problem by dynamically monitoring one or more pre-defined interrupt conditions *during* the flow of electricity and reacting accordingly, thereby providing a more accurate and robust system.

37. Accordingly, the claims of the '391 Patent provide significant technical advancements through a new electric vehicle charging infrastructure and contain one or more inventive concepts for accomplishing the goal of a more complete, flexible, robust and interoperable system governing all aspects of the charging process when compared to the prior art.



38. The claimed limitations, both individually and as an ordered combination, were not well-understood, routine or conventional at the time of the invention.

39. The inventive significance of the '391 Patent is illustrated by the fact that it has been cited in approximately 104 other patent applications, including the following patents and published patent applications: US 11602994 B2, US 11518245 B2, US 11472310 B2, US 11427101 B2, US 11396240 B2, US 11370313 B2, US 11305666 B2, US 11294551 B2, US 11270699 B2, US 11203355 B2, US 11186192 B1, US 11132650 B2, US 11104245 B2, US 11017360 B2, US 10926762 B2, US 10872361 B2, US 10861066 B2, US 10846763 B2, US 10839451 B2, US 10839433 B2, US 10829111 B2, US 10821850 B2, US 10821845 B2, US 10824330 B2, US 10793013 B2, US 10714955 B2, US 10652312 B2, US 10586258 B2, US 10576969 B2, US 10572123 B2, US 10554759 B2, US 10535341 B2, US 10453453 B2, US 10442399 B2, US 10424296 B2, US 10411487 B2, US 10407026 B2, US 10396576 B2, US 10308244 B2, US 10286875 B2, US 10286798 B1, US 10286919 B2, US 10289288 B2, US 10286842 B2, US 10282708 B2, US 10274948 B2, US 10245964 B2, US 10223134 B1, US 10225350 B2, US 10217160 B2, US 10218771 B2, US 10210552 B2, US 10210487 B2, US 10192245 B2, US 10185978 B2, US 10185977 B2, US 10181099 B2, US 10169783 B2, US 10124691 B1, US 10086714 B2, US 10071643 B2, US 9963145 B2, US 9928488 B2, US 9925882 B2, US 9916071 B2, US 9904812 B2, US 9855947 B1, US 9815382 B2, US 9818088 B2, US 9809196 B1, US 9802500 B1, US 9778831 B2, US 9751416 B2, US 9738168 B2, US 9718370 B2, US 9697503 B1, US 9697733 B1, US 9672823 B2, US 9663067 B2, US 9648107 B1, US 2017/0046541 A1, US 9348381 B2, US 9148027 B2, US 9123049 B2, US 9073554 B2, US 9008956 B2, US 8918376 B2, US 8918336 B2, US 8836281 B2, US 8751058 B2, US 8751059 B2, US 8725551 B2, US 8531162 B2, US 8498763 B2, US 8266075 B2, US 2011/0087399 A1,

US 2011/0077806 A1, US 2011/0077805 A1, US 2011/0029170 A1, US 2011/0029187 A1, US 2011/0029189 A1, US 2010/0049533 A1, US 2010/0049610 A1, US 2009/0313103 A1.

40. The '391 Patent claims are valid, enforceable, and not expired.

**Patent-in-Suit No. 8,291,243**

41. U.S. Patent No. 8,291,243, entitled "Adaptive Computing Responsive to Environmental Conditions" (the "'243 Patent"), was duly and legally issued on October 16, 2012. *See* '243 Patent, attached as **Exhibit 9**.

42. The '243 Patent will expire on or about April 9, 2031.

43. The inventors named on the '243 Patent are Dr. Vittorio Castelli, Rick A. Hamilton, II, Brian M. O'Connell, Clifford A. Pickover, and Keith R. Walker; Dr. Vittorio Castelli is the first-named inventor. *See* '234 Patent, attached as **Exhibit 9**.

44. Dr. Castelli received his Ph.D. in electrical engineering from Stanford University.

45. Dr. Castelli has worked with the IBM research division regarding significant intellectual property ("IP") contributions.

46. Dr. Castelli holds several United States patents in various disciplines.

47. The rights to the patent application that issued as the '243 Patent were assigned to IBM by Dr. Castelli and the other inventors and recorded on October 24, 2008, the patent application's filing date; during this time, Dr. Castelli was an employee of IBM, a foremost leader in technology.

48. All rights, title, and interest, including the right to sue for past infringement of the '243 Patent, are owned by and assigned to Plaintiff Graphite Charging Company LLC. *See Notice of Recordation of Assignment, Document No.507274614* (May 10, 2022), attached as **Exhibit 7**.

49. The '243 Patent claims, *inter alia*, methods, systems, program products, and devices for adapting the power consumption of a computational device in response to environmental conditions. *See* '243 Patent, 1:6-9, attached as **Exhibit 9**.

50. At the time of the invention, the prior art in the field attempted to adapt energy consumption and reduce energy usage by various methodologies. For example, processor use could be adaptively reduced or stopped when a processor was not heavily used. Alternatively, monitors and peripherals could be put in a reduced power-consumption mode, etc. *Id.* at 1:36-41. However, such mechanisms were configured to operate only on a *localized* level, in response to local considerations of a computational device. *Id.* at 1:41-43. For example, energy conservation could be manually triggered by a conscientious user or automatically triggered by a hardware configuration or a software application running on the system (e.g., triggering a standby state after a given idle time, or in response to a heat monitor detecting a rise in an internal temperature associated with a powered computer component). *Id.*, at 1:43-49. While these techniques improved the efficiency of *end-point devices* consuming power, they did not teach or suggest contributing back to the efficiency and stability of the *power grid*.

51. Thus, prior art technologies were limited in their responsiveness, including the ability to efficiently respond to larger contextual conditions. For instance, no consideration was given to the present cost of power used or to the sources of that power. *Id.*, at 4:11-19. The prior art failed to consider simultaneous fast control of *both* power supply and demand.

52. Early computers did not use exorbitant amounts of energy. In or around 2000, the increase in processor power consumption was apparent and identified as a threat to performance growth. A few years later, early researchers found that there were additional challenges for larger scale systems (e.g., datacenters) and there was a growing threat that such systems with their

consumptions would impact energy availability to meet household and business demands for power. As such, there were efforts to improve the demand-side efficiency of computers and datacenters. The primary driver was energy cost reduction. The collective use of these devices on a power grid could adjust the demand on the grid itself. The prevailing assumption at the time was that while computers and datacenters may ultimately consume megawatts of power, power providers could continue to match the demand. There was no attempt to focus on additional management of grid power sources and the techniques of the time did not account for the supply side on the power grid itself. Instead, the focus was solely on local system efficiency. The prevailing techniques at the time missed opportunities to introduce stability to the power grid, such as simultaneously controlling both supply and demand from all devices connected to the power grid, which could add further stability to the system – doing so was unconventional at the time. Controlling both source and sink device power usage on a grid would have required a feedback loop between devices and grid conditions, external threats to the grid (e.g., powerful storms), and economic conditions (e.g., power price fluctuations).

53. The '243 Patent brought about for the first time the idea that the control of **both** supply and demand on a power grid can be **both** distributed and coordinated. For example, a device (e.g., autonomous vehicle) can be programmed by a computer to, depending on internal (demand changes) or external (storms, prices) environment conditions to the power grid, change whether the device consumes or supplies power back to the grid. The collective management of many of these devices, including microgrids, provides more granular control over power grid stability and can be used to avoid catastrophic events (e.g., blackouts). This was a technical innovation which was unconventional and not available in the prior art.

54. At the time of the invention, the prior art failed to disclose or suggest an invention for adapting the power consumption of a computer system to environmental conditions, including local *and global demands* on a power grid, by monitoring environmental conditions and appropriately adjusting the power demand of the computer system and/or of a physical infrastructure that houses the computer system. *Id.* at 2:56-62.

55. The '243 Patent describes and claims a novel framework whereby operating environmental condition data relevant to the generation of electric power is acquired from an operating environment feed and analyzed to determine an indication for high electric power demand. Severe changes in demand, for example from storms, can lead to catastrophic power grid failure. If the analysis determines an indication for high electric power demand, then a computational device automatically reduces the amount of electric power consumption. *Id.* at 1:61-67.

56. Either reducing demand on or selling stored power to a power grid during a period of high demand reduces the need to bring online or utilize for stability of the grid inefficient and/or expensive smaller power plants, which reduces pollution and lowers the cost of energy. *Id.* at 4:27-31.

57. Accordingly, the current invention provides for significant technical advancements and contained one or more inventive concepts for accomplishing the goal of a more complete, efficient, robust and interoperable system governing all aspects of energy load management when compared to the prior art.

58. The claimed limitations of the '243 Patent, both individually and as an ordered combination, were not well-understood, routine or conventional at the time of the invention.

59. The significance of the inventiveness of the '243 Patent is illustrated by the fact that it has been cited in approximately 27 other patents and published patent applications, including the following: US 10948885 B2, US 10762454 B2, US 10541556 B2, US 10521867 B2, US 10467639 B2, US 10346931 B2, US 10324429 B2, US 9989937 B2, US 9818073 B2, US 9691076 B2, US 9665078 B2, US 9489036 B2, US 9389850 B2, US 9292116 B2, US 9183522 B2, US 9153001 B2, US 9137050 B2, US 9124535 B2, US 8803350 B2, US 8676953 B2, US 8671167 B2, US 8671191 B2, US 8667132 B2, US 8630744 B2, US 8626354 B2, US 8565903 B2, US 2013/0001946 A1.

60. The '243 Patent claims are valid, enforceable, and not expired.

**Defendant's EV Tesla Charging Stations, Tesla Electric Vehicles, and Tesla App**

61. Defendant makes, uses, sells, offers to sell, and/or imports the EV Tesla Charging Stations product line throughout the United States, including but not limited to Superchargers, Destination Chargers, and Wall Connectors (collectively referred to as "EV Tesla Charging Stations" or "Charging Stations"). *See Support: Charging Your Tesla*, <https://www.tesla.com/support/charging> (last accessed on July 20, 2023), attached as **Exhibit 4**.<sup>4</sup>

62. The EV Tesla Charging Stations offer a variety of electric vehicle charging stations for private, public, and semi-public applications. *Id.*

63. Upon information and belief, each of Defendant's Charging Stations comprise a computer storage medium, which tangibly embodies a computer program that monitors an EV Tesla charging process. Specifically, the Charging Stations continuously monitor the charging of electric vehicles, in part, by using real time interrupt handling for fault conditions and user preference conditions that infringe the '391 Patent. *See e.g., Wall Connector, Mena 14-50*

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<sup>4</sup> Plaintiff expressly reserves the right to add additional products throughout discovery.

*Installation Manual: North America See, at page 5,*  
[https://www.tesla.com/sites/default/files/downloads/wallconnector\\_NEMA\\_14-50\\_en\\_us.pdf](https://www.tesla.com/sites/default/files/downloads/wallconnector_NEMA_14-50_en_us.pdf)

(last accessed July 20, 2023), attached as **Exhibit 10**.

64. Upon information and belief, Defendant manufactures and sells electric vehicles, including but not limited to the Tesla Model S, Model 3, Model X, Model Y, and Cybertruck (“Tesla electric vehicles”), all of which utilize Defendant’s Charging Stations.

65. Upon information and belief, each of Defendant’s Charging Stations and Tesla electric vehicles can be accessed and managed through the Tesla App.

66. Upon information and belief, Defendant’s Charging Stations, Tesla electric vehicles, and Tesla App infringe the ’391 Patent for at least the reasons that these products encompass a system or use a method for managing a charging process of an electric vehicle.

67. Further, upon information and belief, Defendant’s Charging Stations, Tesla electric vehicles, and Tesla App work intraoperatively using integrated software to encompass a system or use a method for managing a charging process of an electric vehicle, thereby infringing the ’391 Patent.

**Defendant’s Suite of Optimization Software Solutions - Autonomous Control**

68. Defendant makes, uses, sells, offers to sell, and/or imports the Tesla’s Suite of Optimization Software Solutions - Autonomous Control and integrated applications including but not limited to Tesla Powerhub, Powerwall, Autobidder, Microgrid Controller, Virtual Machine Mode and Opticaster (collectively referred to as “Autonomous Control”) throughout the United States. *See Tesla Software*, <https://www.tesla.com/support/energy/tesla-software> (last accessed July 20, 2023), attached as **Exhibit 11**.

69. Tesla's suite of optimization software solutions, known as Autonomous Control, consists of an advanced ecosystem of software to support its energy hardware products. Autonomous Control is composed of machine learning, forecasting, optimization and real-time control algorithms used for utility bill reduction, demand response participation, microgrid control and wholesale energy market bidding. *Id.*; *See also Opticaster*, <https://www.tesla.com/support/energy/tesla-software/opticaster> (last accessed July 20, 2023), attached as **Exhibit 12**.

70. Moreover, Tesla's Autonomous Control algorithms automate the dispatch of energy assets to maximize economic value. *Id.*

71. Upon information and belief, Tesla's Autonomous Control infringes the '243 Patent because it embodies and contains methods for adapting the power consumption of a computational device in response to environmental conditions. *Id.*

**Defendant's Notice of the Patents-in-Suit**

72. Plaintiff has complied with the notice requirement of 35 U.S.C § 287.

73. Defendant has received notice of the Patents-in-Suit. Plaintiff sent notification via correspondence to Tesla Inc. at 13101 Tesla Road, Austin, Texas 78725. *See* Notice Letter and Delivery Confirmation, collectively attached as **Exhibit 13**.

74. Plaintiff's Notice Letter instructed Defendant to immediately cease and desist from engaging in any further activity that would infringe the '391 Patent and the '243 Patent. On information and belief, Defendant has neither responded to nor altered its conduct in response to Plaintiff's Notice Letter.

75. On information and belief, at a time prior to August 3, 2023, employees of Defendant read, in whole or in part, the Patents-in-Suit.



76. On information and belief, at a time prior to August 3, 2023, Defendant had actual knowledge of the Patents-in-Suit.

77. On information and belief, at a time prior to August 3, 2023, Defendant had actual knowledge of the Patents-in-Suit by monitoring of patents through their ordinary course of business.

78. At least as of the filing of this Complaint, Defendant had actual knowledge of the Patents-in-Suit.

79. Defendant therefore induced infringement of the Patents-in-Suit in violation of 35 USC § 271(b), by providing to the public, at a minimum, the EV Tesla Charging Stations, Tesla electric vehicles, Tesla App, and the Suite of Optimization Software Solutions, in a manner that directly infringes the Patents-in-Suit.

### **PATENT INFRINGEMENT**

#### **Count I: Infringement of United States Patent No. 8,103,391: Defendant's EV Tesla Charging Stations, Tesla Electric Vehicles, and Tesla App**

80. Plaintiff incorporates each preceding paragraph as if fully set forth herein.

81. On information and belief, and without authority, consent, right, or license, Defendant makes, uses, sells, offers to sell, and/or imports the EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App in the United States. In doing so, Defendant infringes one or more claims, including at least claims 1 - 20 of the '391 Patent under § 271(a), either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App. Through these activities, Defendant also actively induces infringement by others under § 271(b) by at least providing to the public the EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App and directions

instructing users how to use EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App in a manner that directly infringes the '391 Patent.

82. Defendant committed and, upon information and belief, continues to commit acts of patent infringement of the '391 Patent by manufacturing, using, offering for sale, selling, and/or importing EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App.

83. For example, Claim No. 8 of the '391 Patent claims:

A computer program product for managing a charging process of an electric vehicle, the computer program product comprising:

a tangible computer-recordable storage medium;

first program instructions to monitor a set of operational parameters of the charging process during the flow of electricity for one or more interruptions in response to receiving, from an energy transaction execution engine, a request signaling a start of the charging process;

second program instructions to detect the one or more interruptions during the flow of electricity from the set of operational parameters which conform to a set of pre defined interrupt conditions, wherein the one or more interruptions comprise at least one of a device capabilities interruption, a preference interruption, and a data services interruption;

third program instructions to send a response to the energy transaction execution engine to terminate the charging process in response to detecting the one or more interruptions; and wherein the first program instructions, the second program instructions, and the third program instructions are stored on the tangible computer-recordable storage medium.

*See* '391 Patent, Claim No. 8, attached as **Exhibit 8**.

84. Defendant's EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App meet the Claim No. 8 element of **"a computer-program product for managing a charging process of an electric vehicle, the computer program product comprising, a tangible**

**computer-recordable storage medium...**” For example, Defendant’s EV Tesla Charging Stations utilize a control compartment with various computer boards (i.e., a physical device that receives, retains and makes available electronic data for applications and user), to implement the computer program(s) that manage the charging of electric vehicles. *See Support: Charging Your Tesla*, <https://www.tesla.com/support/charging> (last accessed July 20, 2023), attached as **Exhibit 4**; *Wall Connector, Mena 14-50 Installation Manual: North America* See at 5, [https://www.tesla.com/sites/default/files/downloads/wallconnector\\_NEMA\\_14-50\\_en\\_us.pdf](https://www.tesla.com/sites/default/files/downloads/wallconnector_NEMA_14-50_en_us.pdf) (last accessed July 20, 2023), attached as **Exhibit 10**.

85. Defendant’s EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App meet the Claim No. 8 element of “...**first program instructions to monitor a set of operational parameters of the charging process during the flow of electricity for one or more interruptions.**” For example, Defendant’s EV Tesla Charging Stations monitor many charging parameters during the charging process, such as those related to fault conditions and those related to user preference conditions. *See Exhibit 10* at 11-14.

86. Defendant’s EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App meet the Claim No. 8 element of “**in response to receiving, from an energy transaction execution engine, a request signaling a start of the charging process...**” Upon information and belief, the control compartment of Defendant’s EV Tesla Charging Stations has monitoring firmware that receives a monitoring request from control firmware (i.e., an “energy transaction execution engine”) to start monitoring for fault conditions and user preference conditions when the charging process begins. *Id.*

87. Upon information and belief, the control firmware sends this monitoring request after receiving a notification that the vehicle is connected and a charging request to start the charging process. *Id.*

88. Defendant's EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App meet the Claim No. 8 element of **"...second program instructions to detect the one or more interruptions during the flow of electricity from the set of operational parameters which conform to a set of predefined interrupt conditions..."** For example, Defendant's EV Tesla Charging Stations detect fault conditions (i.e., one or more interruptions) during the charging process, including conditions such as battery incompatibility, battery malfunction, over-temperature of a transformer, circuit breaker, etc., that relate to the proper operation of various components of the EV Tesla Charging Stations or the Tesla electric vehicle. *Id.*

89. Defendant's EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App meet the Claim No. 8 element of **"...wherein the one or more interruptions comprise at least one of a device capabilities interruption, a preference interruption, and a data services interruption..."** Defendant's EV Tesla Charging Stations detect at least a device capabilities interruptions (such as a battery malfunction, over-temperature of a transformer etc.) as well as preference conditions (such as dynamic load management configurations, and/or a specific charge amount,) and upon information and belief, data services interruptions. *Id.* at 6; *See also Supercharger Support*, <https://www.tesla.com/support/supercharger> (last accessed July 20, 2023), attached as **Exhibit 14**.

90. Defendant's EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App meet the Claim No. 8 element of **"...third program instructions to send a response to the energy transactions execution engine to terminate the charging process in response to**

detecting the one or more interruptions; and wherein the first program instructions, the second program instructions, and the third program instructions are stored on the tangible computer-record-able storage medium.” For example, upon information and belief, Defendant’s EV Tesla Charging Stations’ monitoring firmware sends a response to control firmware when fault conditions or user preference conditions occur which then stops the charging process. *See Do it Yourself Model S: Charge Port Status Lights*, <https://www.tesla.com/support/do-it-yourself-model-s#charge-port-status> (last accessed July 20, 2023), attached as **Exhibit 15**. Finally, upon information and belief, the aforementioned program instructions are stored on the tangible computer-recordable storage medium.

91. Thus, because the EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App meet all the claim limitations of Claim No. 8, Defendant directly infringes one or more claims of the ’391 Patent under 35 U.S.C. § 271(a).

92. Defendant directly infringes each of claims 1-20 of the ’391 Patent.

93. Since at least 2012, Defendant has committed acts of patent infringement of the ’391 Patent by manufacturing, using, offering for sale, selling, and/or importing EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App. *See Exhibit 1*.

94. Since at least that time, Defendant, acting without authority, consent, right, or license of the ’391 Patent, has directly infringed the ’391 Patent as well as induced, and continues to induce, consumers to use EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App in a manner that directly infringes one or more claims of the ’391 Patent resulting in conduct that constitutes, at a minimum, induced patent infringement under 35 U.S.C. § 271(b) and/or contributory infringement under § 271(c).

95. At least as of the date of receipt of the Notice Letters, receipt of this Complaint, or through the monitoring of competitor's patents in their ordinary course of business, Defendant knew of the '391 Patent, knowingly induced use by consumers by keeping EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App in the marketplace and the stream of commerce, and possessed a specific intent to encourage direct infringement of the '391 Patent by failing to at least remove EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App from the stream of commerce. *See* Notice Letter and Delivery Confirmation, collectively attached as **Exhibit 13**.

96. Further, Defendant possessed, and continues to possess, specific intent to induce infringement of the '391 Patent by at least providing to the public, at a minimum, product specifications and the option to purchase and/or use EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App which directly infringe the '391 Patent.

97. Defendant has actively induced and encouraged and continues to actively induce and encourage consumers to use EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App by marketing, promoting, and advertising the use of EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App in an infringing manner.

98. Upon information and belief, Defendant knows that the EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App are especially made or adapted for use in a manner that infringes the '391 Patent, that the EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App are not staple articles or commodities of commerce, and that EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App are not suitable for substantial non-infringing use, resulting in conduct that constitutes, at a minimum, patent infringement under 35 U.S.C. § 271(c). More specifically, consumers directly infringe (literally and/or under the doctrine of

equivalents) at least Claims 1 –20 of the '391 Patent by using EV Tesla Charging Stations, Tesla electric vehicles, and the Tesla App, resulting in conduct that constitutes, at a minimum, patent infringement under 35 U.S.C. § 271(a).

99. Defendant's foregoing actions constitute and/or will constitute direct infringement, active inducement of infringement, and contribution, by others, to the infringement of the '391 Patent.

100. Plaintiff reserves the right to assert additional products which may infringe the '391 Patent.

101. Plaintiff has been damaged because of Defendant's infringing conduct. Defendant is thus liable to Plaintiff in an amount that adequately compensates Plaintiff for Defendant's infringement, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**Count II: Infringement of United States Patent No. 8,297,243:  
Tesla Suite of Optimization Software Solutions - Autonomous Control**

102. Plaintiff incorporates each preceding paragraph as if fully set forth herein.

103. On information and belief, and without authority, consent, right, or license, Defendant makes, uses, sells, offers to sell, and/or imports the Tesla Suite of Optimization Software Solutions, e.g. the Autonomous Control platform, in the United States.

104. In doing so, Defendant infringes one or more claims, including claims 1-20 of the '243 Patent under § 271(a), either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing Autonomous Control. Through these activities, Defendant also actively induces infringement by others under § 271(b) by at least providing to the public Autonomous Control, and instructing users how to use the system in a manner that directly infringes the '243 Patent.

105. Defendant committed and, upon information and belief, continues to commit acts of patent infringement of the '243 Patent by manufacturing, using, offering for sale, selling, and/or importing Autonomous Control.

106. For example, Claim No. 15 of the '243 Patent claims:

An article of manufacture, comprising:

a computer readable tangible storage medium having computer readable program code embodied therewith, the computer readable program code comprising instructions which, when executed on a computer system, cause the computer system to:

acquire operating environmental condition data relevant to the generation of electric power in a power grid system from an operating environment feed input;

analyze the operating environmental condition data to determine an indication of a high demand for electric power from the power grid system; and

cause a computational device to automatically reduce a current amount of consumption of electric power from the power grid system by the computational device if the analyzing determines the high electric power demand indication.

*See* '243 Patent, Claim No. 15, attached as **Exhibit 9**.

107. Defendant's Autonomous Control meets the Claim No. 15 element of "[a]n article of manufacture, comprising: a computer readable tangible storage medium having computer readable program code embodied therewith, the computer readable program code comprising instructions which, when executed on a computer system..." For example, Tesla's Autonomous Control comprises an advanced ecosystem of software to support its energy hardware products. *See Tesla Software*, <https://www.tesla.com/support/energy/tesla-software> (last accessed July 20, 2023), attached as **Exhibit 11**. Tesla's Microgrid Controller feature within

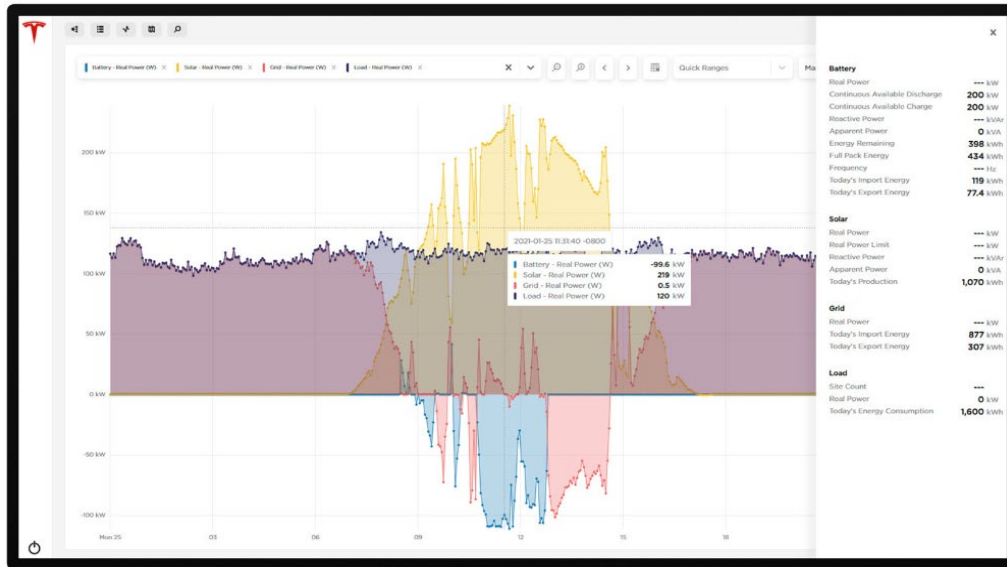
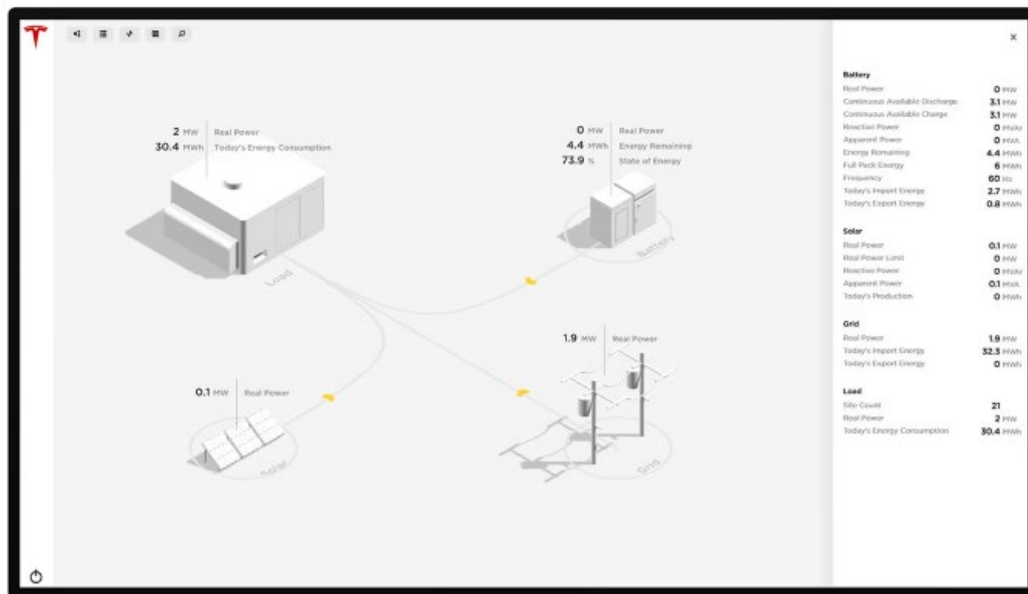


Autonomous Control includes “*software*, controls, and services to effectively manage power and energy flow.” *Id.*; See also *Microgrid Controller* <https://www.tesla.com/support/energy/tesla-software/microgrid-controller> (last accessed July 20, 2023), attached as **Exhibit 16**. Such computer readable program code is manufactured within a computer readable tangible storage medium.

108. Defendant’s Autonomous Control meets the Claim No. 15 element of “... **cause the computer system to: acquire operating environmental condition data relevant to the generation of electric power in a power grid system from an operating environment feed input...**” For example, Tesla’s Autonomous Control, displayed through the Powerhub’s monitoring platform, acquires various energy source loads and provides a single interface for managing many combinations of energy assets, including solar storage and select non-Tesla assets (generations, breakers, transformers). Indeed, Autonomous Control, via Powerhub, covers all common elements of Supervisory Control and Data Acquisition (SCADA) systems.<sup>5</sup> See *Tesla Software*, <https://www.tesla.com/support/energy/tesla-software> (last accessed July 20, 2023), attached as **Exhibit 11**; *Opticaster*, <https://www.tesla.com/support/energy/tesla-software/opticaster> (last accessed July 20, 2023), attached as **Exhibit 12**; *Powerhub*, <https://www.tesla.com/support/energy/tesla-software/powerhub> (last accessed July 20, 2023), attached as **Exhibit 17**; *Commercial Energy*, <https://www.tesla.com/commercial> (last accessed July 20, 2023), attached as **Exhibit 18**.

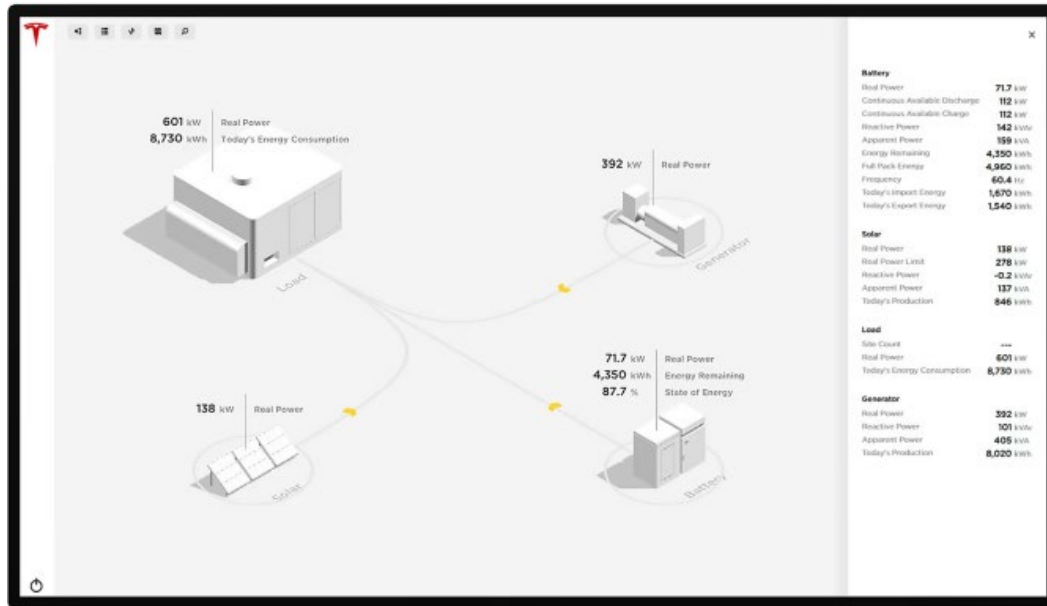
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<sup>5</sup> Upon information and belief, supervisory control and data acquisition (SCADA) is a control system architecture comprising computers, networked data communications and graphical user interfaces for high-level supervision of machines and processes. It also covers sensors and other devices, such as programmable logic controllers, which interface with process plant or machinery.

FIG 1: Powerhub Interface<sup>6</sup>FIG 2: Opticaster Interface<sup>7</sup>

<sup>6</sup> Powerhub is an advanced real-time monitoring and control platform for managing storage, generation and microgrids. See **Exhibit 16**.

<sup>7</sup> Opticaster is an optimization engine for forecasting and improving energy use in real time to minimize electricity costs. See **Exhibit 16**.



**FIG 3: Microgrid Controller Interface<sup>8</sup>**

109. Defendant's Autonomous Control meets the Claim No. 15 element of “...analyze the operating environmental condition of a high demand for electric power from the power grid system...” For example, Tesla's Autonomous Control analyzes and provides performance metrics for monitoring critical parameters in real-time. *See Powerhub*, <https://www.tesla.com/support/energy/tesla-software/powerhub> (last accessed July 20, 2023), attached as **Exhibit 17**. Further, Autonomous Control includes an optimization engine (such as Tesla's Opticaster), for Tesla's energy software which forecasts and optimizes energy in real-time based on operating environmental conditions. *See Tesla Software*, <https://www.tesla.com/support/energy/tesla-software> (last accessed July 20, 2023), attached as **Exhibit 11**; *Opticaster*, <https://www.tesla.com/support/energy/tesla-software/opticaster> (last accessed July 20, 2023), attached as **Exhibit 12**.

<sup>8</sup> Microgrid Controller is an off-grid control software for autonomously maintaining grid stability and minimizing costs across all energy assets. *See Exhibit 16*.

110. Defendant's Autonomous Control meets the Claim No. 15 element of "... **and cause a computational device to automatically reduce a current amount of consumption of electric power from the power grid system by the computational device if the analyzing determines the high electric power demand indication.**" For example, through the Microgrid Controller feature, a cost based optimization algorithm automatically either dispatches or curtails generators and sheds or reconnects loads in order to maintain system operation most cost effectively. This functionality increases renewable energy usage and reduces generator activation. *See* '243 Patent, 3:51-60, attached as **Exhibit 9**; *Microgrid Controller*, <https://www.tesla.com/support/energy/tesla-software/microgrid-controller> (last accessed July 20, 2023), attached as **Exhibit 16**. Further, through the Opticaster feature, Autonomous Control reduces energy spending, increases renewable energy consumption and delivers clean power to the grid during times of need. *See* '243 Patent, 3:43-51, attached as **Exhibit 9**; *Opticaster*, <https://www.tesla.com/support/energy/tesla-software/opticaster> (last accessed July 20, 2023), attached as **Exhibit 12**.

111. Thus, because Autonomous Control meets all the claim limitations of Claim No. 15, Defendant directly infringes one or more claims of the '243 Patent under 35 U.S.C. § 271(a).

112. Defendant directly infringes each of claims 1-20 of the '243 Patent.

113. Defendant has committed acts of patent infringement of the '243 Patent by manufacturing, using, offering for sale, selling, and/or importing Autonomous Control. *See Tesla Software*, <https://www.tesla.com/support/energy/tesla-software> (last accessed July 20, 2023), attached as **Exhibit 11**; *Opticaster*, <https://www.tesla.com/support/energy/tesla-software/opticaster> (last accessed July 20, 2023), attached as **Exhibit 12**.

114. Defendant, acting without authority, consent, right, or license of the '243 Patent, has directly infringed the '243 Patent, as well as induced, and continues to induce, consumers to use Autonomous Control in a manner that directly infringes one or more claims of the '243 Patent resulting in conduct that constitutes, at a minimum, induced patent infringement under 35 U.S.C. § 271(b) and/or contributory infringement under § 271(c).

115. At least as of the date of receipt of the Notice Letters, receipt of this Complaint, or through the monitoring of competitor's patents through their ordinary course of business, Defendant knew of the '243 Patent, knowingly induced use by consumers by keeping Autonomous Control in the marketplace and the stream of commerce, and possessed a specific intent to encourage direct infringement of the '243 Patent by failing to at least remove Autonomous Control from the stream of commerce. *See Notice Letter and Delivery Confirmation*, collectively attached as **Exhibit 13**.

116. Further, Defendant possessed, and continues to possess, specific intent to induce infringement of the '243 Patent by at least providing to the public, at a minimum, product specifications and the option to purchase and/or use Autonomous Control, which directly infringes the '243 Patent.

117. Defendant has actively induced and encouraged and continues to actively induce and encourage consumers to use Autonomous Control by marketing, promoting, and advertising the use of Autonomous Control in an infringing manner.

118. Upon information and belief, Defendant knows that Autonomous Control is especially made or adapted for use in a manner that infringes the '243 Patent, that Autonomous Control is not a staple article or commodity of commerce, and that Autonomous Control is not suitable for substantial non-infringing use, resulting in conduct that constitutes, at a minimum,

patent infringement under 35 U.S.C. § 271(c). More specifically, consumers directly infringe (literally and/or under the doctrine of equivalents) at least Claims 1-20 of the '243 Patent by using Autonomous Control, resulting in conduct that constitutes, at a minimum, patent infringement under 35 U.S.C. § 271(a).

119. Defendant's foregoing actions constitute and/or will constitute direct infringement, active inducement of infringement, and contribution, by others, to the infringement of the '243 Patent.

120. Plaintiff reserves the right to assert additional claims of the '243 Patent that Defendant infringes and/or additional infringing products.

121. Plaintiff has been damaged because of Defendant's infringing conduct. Defendant is thus liable to Plaintiff in an amount that adequately compensates Plaintiff for Defendant's infringement, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

### **JURY DEMAND**

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff requests a trial by jury on all issues so triable.

### **PRAYER FOR RELIEF**

**WHEREFORE**, Plaintiff respectfully requests the Court to enter judgment in its favor and against Defendant as follows:

- a. finding that Defendant has infringed, contributed to, and induced infringement of one or more claims of the '391 and '243 Patents-in-Suit;
- b. awarding Plaintiff damages under 35 U.S.C. § 284, or otherwise permitted by law, and damages for any continued post-verdict infringement;
- c. awarding Plaintiff damages for the unjust enrichment of Defendant;

- d. awarding Plaintiff pre-judgment and post-judgment interest on the damages award and costs;
- e. declaring this case exceptional pursuant to 35 U.S.C. § 285;
- f. awarding costs of this action and attorney fees pursuant to 35 U.S.C. § 285, or as otherwise permitted by the law; and
- g. awarding such other costs and further relief the Court determines to be just and equitable.

Dated: August 4, 2023

Respectfully submitted,

/s/Joseph M. Abraham

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